

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/981,519	03/17/98	PFEIFFER	J 032287-001

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BURNS DOANE SWECKER & MATHIS L L P  
POST OFFICE BOX 1404  
ALEXANDRIA VA 22313-1404

EXAMINER

NGUYEN, S

ART UNIT	PAPER NUMBER
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2664

DATE MAILED:

10/25/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No. <b>08/981,519</b>	Applicant(s)	<b>Pfeiffer</b>
	Examiner <b>Steven Nguyen</b>	Group Art Unit <b>2664</b>	

Responsive to communication(s) filed on Aug 7, 2000

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle* 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claim

Claim(s) 2-10 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 2-10 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

**-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --**

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## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the amendment A filed on 8/7/2000. Claim 1 has been canceled and claims 2-10 are pending in the application.

### ***Information Disclosure Statement***

2. The examiner does not locate any PTO-1449 which is submitted by the applicant on 6/3/1998 in the file wrapper.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grude (USP 5619505) in view of Amada et al (USP 4841521).

As claims 8-9, Grube discloses a method of modulating and demodulating a digital data by using DMT for bidirectional data transmission via two wire line using a full duplex method (See Fig 6-8, Ref 122 and 124). However, Grube does not show a transmission frame being divided

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into two set of time slots; a first set of time slots for a first transmission direction and a second set of time slots for a second transmission direction. In the same field of endeavor, Amada discloses a method of bidirectional data transmission for two wire line wherein the transmitted data and received data are separated by the time slots that are subdivided from a frame (See Fig 1a, col 1, lines 45-59 and col 3, lines 1-11, the transmitted data "A to B" and received data "B to A" in one frame which is divided into a plurality of time sections "time slots").

Since, Grude suggests a method of using DMT transceiver for full/half duplex by coupling a time division multiplex frame into a DMT transceiver (See col 3, lines 32 and col 11, lines 30-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a well-known method such as dividing a frame into two set of time slots wherein first set of time slots for transmitting data and second set of time slots for receiving data by using a full/half duplex as discloses Amada into Grude's DMT transceiver. Even without, Amada's teaching, one of ordinary skill in the art would recognize a step of dividing the time slots into transmission and receiving set. The motivation would have been to reduce a manufacturing cost.

As claim 2, Grude and Amada does not disclose a number of time slots in a frame are 30 and K is 1. However, it would have been obvious to one skill in the art to divide a frame into the transmitted and received time slots such as the number of time slots divide into any numbers and using any number time slot for transmitted data.

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grude and Amada as applied to claim 8 above, and further in view of Kageyama (USP 4144522).

Grude and Amada fails to disclose a step of storing a transmission data into a buffer for transmitting to the receiving node and using ARQ method; However, in the same field of endeavor, Kageyama discloses a method of using an ARQ method for transmitting the data over a transmission channel until it does not receive a notifying of data transmission error from the received station (Col 20-36).

Since a method of using ARQ for retransmitting the data blocks is well known in the art at the time of invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method of ARQ for retransmitting the data blocks when an error occurs as taught by Kageyama's system into Grude and Amada's system. The motivation would have been to control the occurrence of an error in data transmission between the transmitting and receiving sides.

6. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grude and Amada as applied to claim 8 above, and further in view of Huebner (USP 3798608).

Grude and Amada fails to disclose a claimed invention. However, in the same field of endeavor, Huebner discloses in the event of error the data are modified by a logic inversion before retransmitting (Col 7, lines 57 to col 8, lines 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

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invention was made to apply a method of detecting an error in the transmitted data, modifying the transmitted data by a logic inversion before retransmitting the data as taught by Huebner's system into the Grude and Amada's system. The motivation would have been to reduce the retransmitted data if error occurs during the transmission.

7. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grude and Amada as applied to claim 8 above, and further in view of Cioffi (USP 5625651).

Grude and Amada fails to disclose the claimed invention. However, in the same field of endeavor, Cioffi discloses a method of selecting a carrier frequency of DTM for synchronization with frequency powered signal to reduce interference (Col 5, lines 1-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a teaching of Cioffi such as selecting a carrier frequency according to the powered signal to reduce the interference into Grude and Amada's system. The motivation would have been to coordinate and reliably interpret signals sent from the remotes.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grude and Amada as applied to claim 8 above, and further in view of Bowman (USP 5151896).

Grude and Amada fails to disclose the claimed invention. However, in the same field of endeavor, Bowman discloses a method of allowing the TDM being carried out synchronously on the two wire lines with a result that either transmission or reception is performed simultaneously on the two wire lines (Col 14, lines 47-62).

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Since, Amada suggests that the transmitted and received data must be transmitted in the same frame (See Fig 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method of allowing a station to transmit or reception simultaneously as taught by Bowman into Grude and Amada's communication system.

*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bingham (USP 5644573) discloses a method for synchronization all the remote terminal.

May (USP 5835536) discloses a method for reducing PAR of DMT.

Ho (USP 5317596) discloses a method echo canceller in DMT transceiver.

Chalmers (USP 5668802) discloses HDSL transceiver using DMT demodulator.

Cioffi (USP 5673290) discloses a ADSLcompatible DMT.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Nguyen whose telephone number is (703) 308-8848. The examiner can normally be reached on Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (703) 305-4366.

The fax phone number for this group is (703) 305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

STEVEN H. D. NGUYEN

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October 16, 2000



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